Volunteer Lake Assessment Program Individual Lake Reports

TUCKER POND, SALISBURY, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	486	**Max. Depth (m):**	6.7	**Flushing Rate (yr^{-1})**	2.1
Surface Area (Ac.):	57	**Mean Depth (m):**	2	**P Retention Coef:**	0.69
Shore Length (m):	2,300	**Volume (m^3):**	449,500	**Elevation (ft):**	675

TROPHIC CLASSIFICATION

Year	Trophic class
1980	OLIGOTROPHIC
1998	MESOTROPHIC

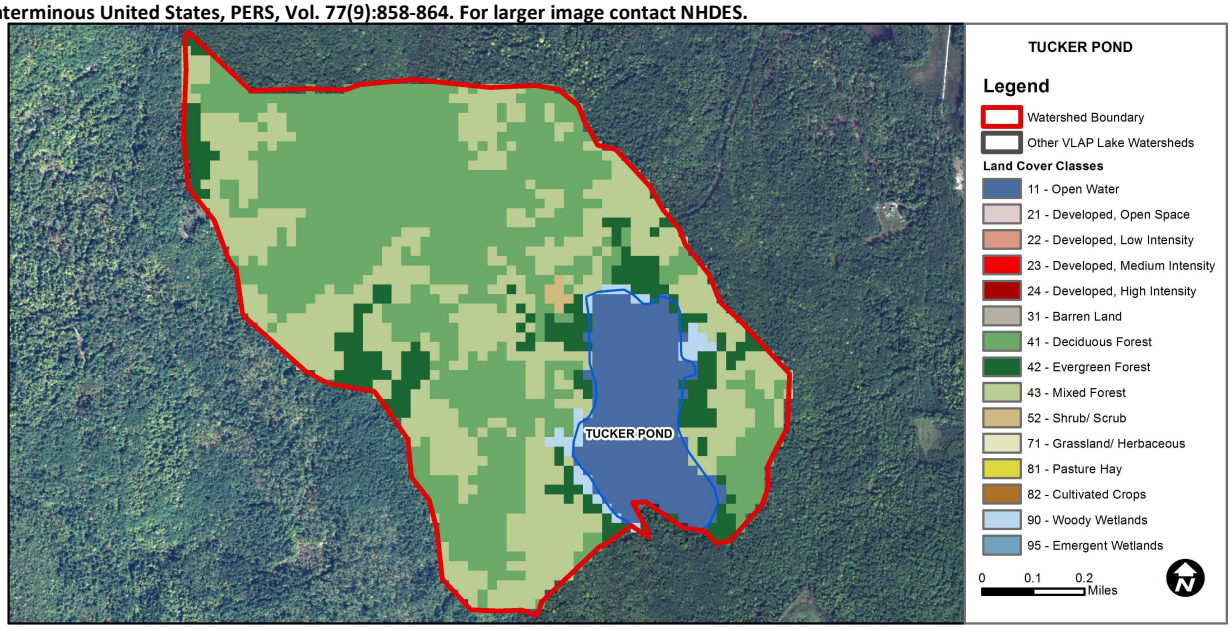
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

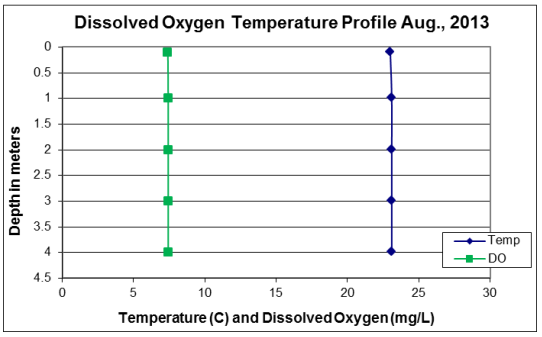


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	11.1	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	0	Deciduous Forest	44.65	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	9.33	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	33.18	Woody Wetlands	1.5
Developed-High Intensity	0	Shrub-Scrub	0.32	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
TUCKER POND, SALISBURY, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low and much less than the state median. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began. We hope to see this continue!
- **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity and chloride levels were low and less than the state median. Historical trend analysis indicates relatively stable epilimnetic (deep spot: upper water layer) conductivity with moderate variability between years.
- **TOTAL PHOSPHORUS:** Epilimnetic and hypolimnetic (deep spot: lower water layer) phosphorus levels were low and less than the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years. Dead Mans Inlet and Outlet phosphorus were also low. Inlet #1 phosphorus was slightly elevated.
- **TRANSPARENCY:** Transparency measured without the viewscope was low and less than the state median due to small waves and windy conditions. Transparency measured with the viewscope was very good, the Secchi disk was visible on the pond bottom, and this method was a better representation of actual conditions. Historical trend analysis indicates relatively stable transparency with moderate variability between years.
- **TURBIDITY:** Deep spot and tributary turbidity were low.
- **PH:** Deep spot pH levels were sufficient to support aquatic life however historically have been less than the desirable range 6.5 – 8.0 units. Historical trend analysis indicates significantly decreasing (worsening) epilimnetic pH since monitoring began.
- **DISSOLVED OXYGEN:** Dissolved oxygen levels were high throughout the water column and sufficient to support aquatic life.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August, to better assess seasonal and historical trends and decrease data variability. The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff from lake and watershed properties, dirt/gravel roads and steep slopes. DES' "Homeowner's Guide to Stormwater Management" is a great resource. Keep up the great work!



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

Table 1. 2013 Average Water Quality Data for TUCKER POND

Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
					NVS	VS		
Dead Mans Inlet			22.6	9			0.31	6.64
Epilimnion	4.50	2.01	29.3	8	2.70	4.60	0.52	6.54
Hypolimnion			29.5	10			0.60	6.62
Inlet #1			24.7	18			0.65	6.69
Outlet			29.2	9			0.42	6.54

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Degrading	Data significantly decreasing.	Chlorophyll-a	Improving	Data significantly decreasing.
Conductivity	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.